## IN THE TITLE

Please cancel the present title and substitute the following title therefor:

COMPUTED TOMOGRAPHY APPARATUS WITH AUTOMATIC PARAMETER MODIFICATION TO PREVENT IMPERMISSIBLE OPERATING STATES

## IN THE ABSTRACT

Please amend the abstract as follows—a clean copy appears in Appendix B:

[The invention relates to a computer] A computed tomography (CT) device [having] has adjustable operational parameters [(*I*, *T*), which has] and a control unit and [means] a unit for preselecting a combination of operational parameters [(*I*, *T*)] for an examination to be carried out. [In this case, a] The control unit determines, for the case where a combination of operational parameters [(*I*, *T*)] which might lead to an impermissible operating state is preselected for an examination to be carried out, [determines,] a value for at least one operational parameter [(*I*, *T*), a value] which deviates from the preselected combination of operational parameters [(*I*, *T*)] and for which the [envisaged] planned examination can be carried out in a manner avoiding the impermissible operating state without a significant reduction in the image quality by comparison with the preselected combination of operational parameters [(*I*, *T*)].

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-18. (cancelled)

19. (new) A computed tomography apparatus comprising:

a measurement unit adapted to receive an examination subject, said measurement unit, in a scan of said subject, generating data values for said subject;

a control unit connected to said measurement unit for operating said measurement unit during said scan according to a combination of operating parameters;

an image computer supplied with said data values for reconstructing an image of said subject from said data values, said image having an image quality;

a user-operable input unit connected to said control unit allowing a user to enter a selected combination of said operating parameters for conducting a user-intended scan, said selected combination, if implemented, causing an image with a user-intended image quality to be reconstructed; and

said control unit determining whether said selected combination would produce an impermissible operating state of said measurement unit and, if so, said control unit causing at least one of said operating parameters in said selected combination to be altered to a value which permits said user-intended scan to be conducted while avoiding said impermissible operating state and which produces an image of said subject having an image quality which is not significantly reduced in comparison to said user-intended image quality.

20. (new) A computed tomography apparatus as claimed in claim 19 wherein said control unit automatically sets said altered value of said at least one of said operating parameters in said selected combination, and automatically operates said measurement unit to conduct said scan with said altered value.

21. (new) A computed tomography apparatus as claimed in claim 20 wherein said control unit generates information identifying said altered value which has automatically been set.

22. (new) A computed tomography apparatus as claimed in claim 19 wherein said control unit generates information identifying said altered value, and wherein said control unit must be enabled, by an input entered via said input unit, to conduct said user-intended scan with said altered value.

23. (new) A computed tomography apparatus as claimed in claim 19 wherein said measurement unit is adapted for conducting a spiral scan of said subject, and wherein said measurement unit includes an X-ray source which emits an X-ray beam, a radiation detector disposed in said X-ray beam, and a subject support adapted to receive said subject thereon, said measurement unit rotating said X-ray source and said radiation detector around said subject while effecting a relative longitudinal movement between said X-ray source and said detector, and said subject support, said measurement unit conducting said spiral scan with a defined effective slice thickness during a scan time during which the X-ray source is operated with a tube current, and wherein said control unit, to avoid said impermissible operating state, alters said at least one of said operating parameters in said selected combination so that an mAs product contributing to a sectional image of the defined effective slice thickness is not significantly reduced in comparison to an mAs product contributing to said sectional image of said defined effective slice thickness in said user-intended scan.

24. (new) A computed tomography apparatus as claimed in claim 23 wherein said spiral scan has a pitch associated therewith, and wherein said image computer reconstructs a sectional image of said subject so that a layer sensitivity profile of the reconstructed sectional image is substantially independent of the pitch, with the mAs product, employed for obtaining the data values from which said reconstructed sectional image is reconstructed, is dependent on the pitch.

25. (new) A computed tomography apparatus as claimed in claim 24 wherein said operating parameters include said scan time and said tube current, and wherein said control unit keeps the product of said tube current and said scan time, in the scan conducted with said altered value, equal to the product of the tube current and the scan time in said selected combination.

26. (new) A computed tomography apparatus as claimed in claim 24 wherein said X-ray source has a focus, with a focus size, from which said X-ray beam is emitted, and further comprising a beam diaphragm for gating said X-ray beam to produce a collimated slice thickness, and wherein said input unit allows entry of at least one of an upper limit value and a lower limit value for at least one operating parameter selected from the group consisting of maximum permissible scan time, minimum mAs product per sectional image, maximum mAs product per sectional image, minimum effective slice thickness, maximum effective slice thickness., minimum collimated slice thickness, maximum collimated slice thickness, minimum rotation time, maximum rotation time, minimum pitch, maximum pitch, minimum scan length, maximum scan length, minimum waiting time before conducting said scan, maximum waiting time before conducting said scan, and focus size.

27. (new) A computed tomography apparatus as claimed in claim 26 wherein said control unit optimizes the operating parameters in said selected combination relative to at least one optimization goal, dependent on said at least one of said upper limit and said lower limit.

28. (new) A computed tomography apparatus as claimed in claim 27 wherein said control unit optimizes the operating parameters in said selected combination relative to an optimization goal selected from the group consisting of minimum scan time, maximum spatial resolution, maximum temporal resolution, and maximum scan length.

29. (new) A computed tomography apparatus as claimed in claim 27 wherein said control unit optimizes said operating parameters of said selected combination dependent on a plurality of optimization goals, and wherein said control unit ranks the respective optimization goals in said plurality of optimization goals dependent on ranks entered via said input unit.

30. (new) A computed tomography apparatus as claimed in claim 26 wherein said control unit determines whether it is impossible to avoid an impermissible operating state and to comply with said at least one of said upper limit value and said lower limit value and wherein, if compliance is impossible, said control unit makes available a combination of operating parameters which approximate said selected combination without producing an impermissible operating state of said measurement unit.

31. (new) A computed tomography apparatus as claimed in claim 30 wherein, if compliance is impossible, said control unit makes available a plurality of combinations of operating parameters, said combinations being respectively optimized dependent on different optimization goals.

32. (new) A computed tomography apparatus as claimed in claim 30 wherein said control unit automatically operates said measurement unit to conduct said user-intended scan with said combination of operating values which approximates said selected combination.

33. (new) A computed tomography apparatus as claimed in claim 32 wherein said control unit makes information available identifying each value of each operating parameter in said combination of operating parameters which approximates said selected combination, which does not comply with said at least one of said upper limit value and said lower limit value.

34. (new) A computed tomography apparatus as claimed in claim 30 wherein said control unit makes information available identifying any value of any of said operating parameters in said combination of operating parameters which approximates said selected combination, which does not comply with said at least one of said upper limit value and said lower limit value, and wherein said control unit requires enablement, via said input unit, to conduct said user-intended scan using said combination of operating values which approximates said selected combination.

35. (new) A computed tomography apparatus as claimed in claim 19 wherein said control unit generates and makes available a plurality of different combinations of operating parameters, for successive scans of said subject, respectively dependent on different optimization goals for optimizing said operating parameters.

36. (new) A computed tomography apparatus as claimed in claim 19 wherein said control unit ranks said operating parameters dependent on a rank

order entered via said input unit, and selects an operating parameter for alteration dependent on its rank order.

37. (new) A computed tomography apparatus as claimed in claim 19 wherein said measurement unit has an X-ray source which emits an X-ray beam from a focus having a focus size, and a radiation detector on which said X-ray beam is incident with an effective slice thickness, and a beam diaphragm disposed for gating said X-ray beam to produce a collimated slice thickness, said X-ray source and said radiation detector being rotatable around said subject to conduct said scan, and wherein said image computer reconstructs a sectional image of said subject, the data values used by said image computer to reconstruct said sectional image having been produced by said measurement unit with an mAs product, and wherein said input unit allows entry of at least one of an upper limit value and a lower limit value for at least one operating parameter selected from the group consisting of maximum permissible scan time, minimum mAs product per sectional image, maximum mAs product per sectional image, minimum effective slice thickness, maximum effective slice thickness, minimum collimated slice thickness, maximum collimated slice thickness, minimum rotation time, maximum rotation time, minimum scan length, maximum scan length, minimum waiting time before conducting said scan, maximum waiting time before conducting said scan and focus size.

38. (new) A computed tomography apparatus as claimed in claim 37 wherein said control unit optimizes the operating parameters in said selected combination relative to at least one optimization goal, dependent on said at least one of said upper limit and said lower limit.

39. (new) A computed tomography apparatus as claimed in claim 38 wherein said control unit optimizes the operating parameters in said selected combination relative to an optimization goal selected from the group consisting of

minimum scan time, maximum spatial resolution, maximum temporal resolution, and maximum scan length.

40. (new) A computed tomography apparatus as claimed in claim 38 wherein said control unit optimizes said operating parameters of said selected combination dependent on a plurality of optimization goals, and wherein said control unit ranks the respective optimization goals in said plurality of optimization goals dependent on ranks entered via said input unit.

41. (new) A computed tomography apparatus as claimed in claim 37 wherein said control unit determines whether it is impossible to avoid an impermissible operating state and to comply with said at least one of said upper limit value and said lower limit value and wherein, if compliance is impossible, said control unit makes available a combination of operating parameters which approximate said selected combination without producing an impermissible operating state of said measurement unit.

42. (new) A computed tomography apparatus as claimed in claim 41 wherein, if compliance is impossible, said control unit makes available a plurality of combinations of operating parameters, said combinations being respectively optimized dependent on different optimization goals.

43. (new) A computed tomography apparatus as claimed in claim 41 wherein said control unit automatically operates said measurement unit to conduct said user-intended scan with said combination of operating values which approximates said selected combination.

44. (new) A computed tomography apparatus as claimed in claim 43 wherein said control unit makes information available identifying each value of

each operating parameter in said combination of operating parameters which approximates said selected combination, which does not comply with said at least one of said upper limit value and said lower limit value.

45. (new) A computed tomography apparatus as claimed in claim 41 wherein said control unit makes information available identifying any value of any of said operating parameters in said combination of operating parameters which approximates said selected combination, which does not comply with said at least one of said upper limit value and said lower limit value, and wherein said control unit requires enablement, via said input unit, to conduct said user-intended scan using said combination of operating values which approximates said selected combination.